IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Alfonso ARECHAGA CAMARA et al.   Docket No.: CUC-118

Serial No.   Group Art Unit:

Filed: Examiner:

For: GLASS MELTING FURNACE

600 Third Avenue
New York, NY 10016
June 14, 2001

Assistant Commissioner
  for Patents
Washington, D. C. 20231

AMENDMENT CONCURRENT WITH FILING

SIR:

This is an amendment concurrent with filing. Please amend the application as follows:

IN THE CLAIMS:

Please amend claims 2-6. Attached is a marked-up set of claims 2-6 and a clean version of claims 2-6 as amended.

REMARKS

This amendment is to place claims 2-6 in conventional US format with respect to claim dependency.

Respectfully submitted,
BIERMAN, MUSERLIAN AND LUCAS

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2. Glass melting furnace, according to claim 1, featuring a mass temperature gauge housed inside a molybdenum casing.

3. Glass melting furnace, according to claim 1, featuring molybdenum casing housing several mass temperature gauges.

4. Glass melting furnace, according to claim 1, featuring a receptacle containing a gas temperature gauge connecting with each flue gas recuperative chamber.

5. Glass melting furnace, according to claim 1, featuring a means of calculating the derivative of the temperature inside the liquid mass (θ'_1) and the derivative of the temperature inside the gases (θ'_2) based on the data furnished by the temperature gauge(s) for mass and for gases, with respect to the time, with the decision of how best to supply the fuel being based on these derivatives (θ'_1), (θ'_2).

6. Glass melting furnace, according to claim 5, featuring a decision based on these derivatives (θ'_1), (θ'_2), which is based on an algorithm, in such a way that:

a) if the derivative (θ'_2) of the temperature of the gases and the derivative (θ'_1) of the temperature of the liquid mass increase or do not change, the influx of the fuel is slowly decreased.

b) if one of the derivatives (θ'_1) (θ'_2) decreases and the other fails to increase, the influx of fuel is rapidly increased.

c) if one of the derivatives increases and the other decreases, the alarm is set off for rapid intervention.

CLAIMS

1. Glass melting furnace of the type consisting of a melting chamber, inside which is found the liquid glass mass, with an outlet, and at least one flue gas recuperative chamber, means for supplying the influx of fuel, featuring at least one mass temperature gauge immersed in the liquid glass mass and placed approximately:

a) at a height (h_2) with respect to the bottom of the melting chamber of 1/3 to 1/5 of the height (h) of the level of the liquid glass mass, and

$$1/5\ h \leq h_2 \leq 1/3\ h$$

b) on the longitudinal axis of the melting chamber at a distance (l_1) with respect to the wall of the chamber opposite the outlet, of between 0.6 and 0.85% of the length of the melting chamber

$$0.61 \leq l_1 \leq 0.85\ l$$

2. Glass melting furnace, according to the previous claim featuring a mass temperature gauge housed inside a molybdenum casing.

3. Glass melting furnace, according to the previous claims, featuring molybdenum casing housing several mass temperature gauges.

4. Glass melting furnace, according to the first claim, featuring a receptacle containing a gas temperature gauge connecting with each flue gas recuperative chamber.

5. Glass melting furnace, according to the previous claims, featuring a means of calculating the derivative of the temperature inside the liquid mass (θ'_1) and the derivative of the temperature inside the gases (θ'_2) based on the data furnished by the temperature gauge(s) for mass and for gases, with respect to the time, with the decision of how best to supply the fuel being based on these derivatives (θ'_1), (θ'_2).

6. Glass melting furnace, according to the fifth claim, featuring a decision based on these derivatives(θ'_1), (θ'_2), which is based on an algorithm, in such a way that: